UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report No. 50-335/79-24

Licensee: Florida Power and Light Company
9250 West Flagler Street
Miami, Florida 33101

Facility Name: St. Lucie Unit No. 1

Docket No. 50-335

License No. DPR-67

Inspected at St. Lucie Site near Fort Pierce, Florida

Inspected by: J. A. Dyer — 9/27/79
J. A. Dyer — Date Signed

Approved by: for R. C. Lewis
R. D. Martin, Section Chief, RONS Branch — Date Signed

SUMMARY

Inspection on September 2-4 and 10-13, 1979

Areas Inspected

This routine, unannounced inspection involved 65 inspector-hours onsite in the areas of plant operations and activities during and subsequent to Hurricane David.

Results

Of the two areas inspected, no apparent items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

Licensee Employees

*C. M. Wethy, Plant Manager
*J. E. Bowers, Maintenance Superintendent
*J. H. Barrow, Operations Superintendent
C. A. Wells, Operations Supervisor
**K. N. Harris, Assistant Manager Power Resources Nuclear
M. B. Vincent, Assistant Plant Superintendent Electrical
***D. A. Sager, Technical Staff Engineer

Other licensee employees contacted included 15 operations personnel.

*Attended exit interview on September 4 and 13, 1979
**Attended exit interview on September 4, 1979 only
***Attended exit interview on September 13, 1979 only

2. Exit Interview

The inspection scope and findings were summarized on September 4 and September 13, 1979 with those persons indicated in Paragraph 1 above. The inspector discussed the reportability of events that occurrred during "Hurricane David" during the exit on September September 13, 1979. Due to a difference in interpretation concerning reportability; the failure of the 1B diesel to start due to loss of the B 4160 volt bus was not reported as a prompt reportable occurrence. The licensee stated that he did not agree with the NRC position on the prompt reporting of this occurrence but would report it as such. The inspector acknowledged the licensee's comment.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Events During Hurricane David.

When the inspector arrived on site on September 2, 1979, a "Hurricane Watch" for the St. Lucie plant area had been issued. The licensee had initiated E-Plan Implementing Procedure No. 3100024E. All portions of the procedure pertaining to a Hurricane Watch (Section 8.3) had been completed. At 6:00 p.m. a "Hurricane Warning" for the area was issued. The licensee initiated Section 8.4 of procedure number 3100024E pertaining to a "Hurricane Warning".

As a precautionary measure, the licensee made the decision to shut the unit down and go to the cold shutdown condition. A power reduction was commenced at 6:40 p.m. on September 2, 1979, and the unit was taken off the line at 9:59 p.m. The unit was in the cold shutdown condition at 8:59 a.m. on September 3, 1979.

At approximately noon on September 3, 1979, a cable from the Unit no. 2 stationary Chicago bridge and Iron guyed derrick crane fell across the lines of the "B" Startup Transformer. A lockout occurred on the East Bus and the "B" Startup Transformer was lost. All of the "B" side of the electrical system was de-energized with the exception of the "B" DC bus which was carred by the "B" battery. The "B" inverter was lost (caused by a blown fuse). The "AB" AC busses were lost because they were tied to the "B" side. The "AB" DC bus which was tied to the "B" DC bus was lost (assumed lost due to current transient). The station uninterruptable power supply (SUPS) was lost. (The normal supply was from the "B" side 480 AC bus and the backup was from the "AB" DC bus). The SUPS normally supplies annunciator, some instrumentation, lighting, communications (except PAX and Bell), national alert warning System (NAWAS), and the Sequence of Events Recorder. The "B" diesel generator failed to start on undervoltage.

The plant was being maintained in cold shutdown by the "B" low pressure safety injector (LPSI) pump when the event occurred. A slight heatup rate was observed. The licensee started the "A" LPSI pump and took manual control of flow control valves to maintain system temperature.

Since the reason for the "B" diesel generator not starting on undervoltage was not known and the potential for a faulted bus or ground was suspected, the diesel knife switch (control power) was opened to prevent the diesel from starting until the busses could be checked by electrical maintenance personnel.

The power to the de-energized busses was restored in a conservative systematic manner. Busses and load centers were checked to verify that faults or grounds did not exist prior to restoring them to service. The "B" diesel was placed in service supplying the "B" essential loads and the "A" loads continued to be supplied by the "A" startup transformer.

No items of noncompliance or deviations were identified.

6. Followup Subsequent to Hurricane David

The inspector reviewed and discussed the sequence of events that occurred with operations, electrical maintenance, technical staff personnel and reviewed the Facility Review Group (FRG) draft minutes pertaining to the review of events related to "Hurricane David". The FRG recommended that, following electrical maintenance checks, it be verified that the "AB" DC bus could be tied to either the "A" or "B" DC busses and that the "B" diesel would start and load automatically on loss of voltage. The inspector reviewed the "Control Center Operators Log" for September 5 and 6, 1979,

and verified that these recommended tests were conducted subsequent to repair of the "B" startup transformer and prior to restoring the plant to power.

The cause for not being able to tie the "AB" DC bus to the "A" DC bus during the event could not be determined. A check of the diesel start circuitry revealed that a relay in the loss of voltage start start circuit was sticking and hanging up. The relay was replaced.

No items of noncompliance or deviations were identified.